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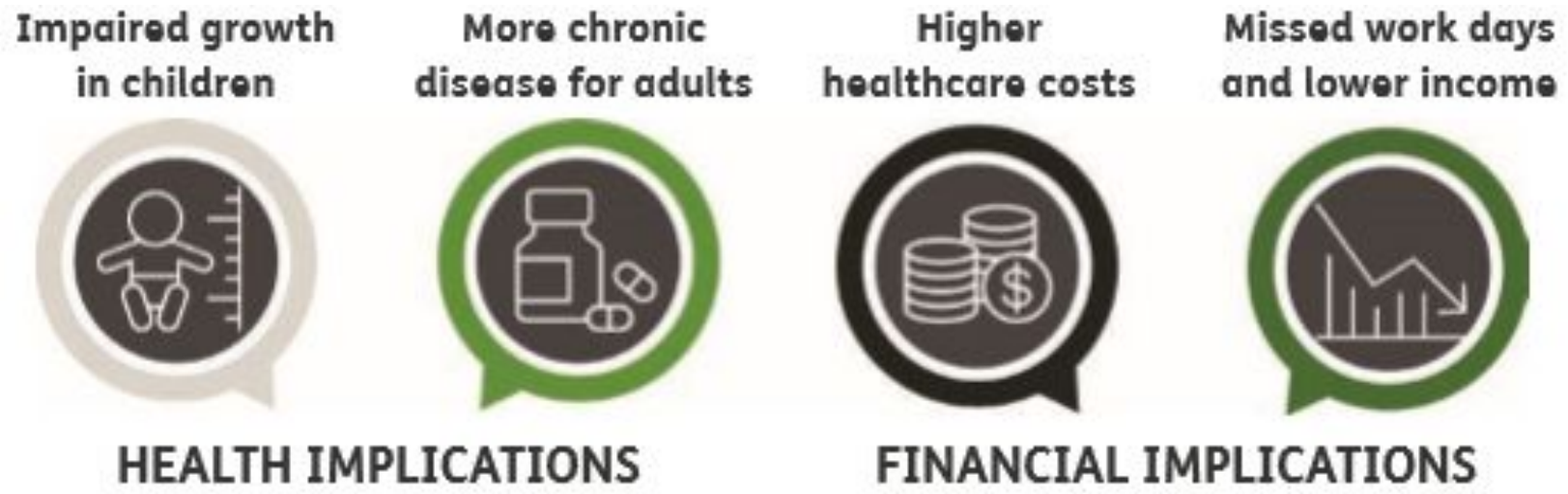
Food As Medicine:

Health Systems Explore New Ways to Improve Outcomes for Patients

Sheryl L. Garland, MHA, FACHE
Chief of Health Impact

Impact of Food Insecurity on Health

"Unhealthy diets amplify the negative outcomes experienced by food insecure individuals"



Food Insecurity and Health: A Toolkit for Physicians and Health Care Organizations, Humana and Feeding America, https://hungerandhealth.feedingamerica.org/wp-content/uploads/2017/11/Food-Insecurity-Toolkit.pdf. Accessed October 20, 2020.

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VCU's Academic Health Center

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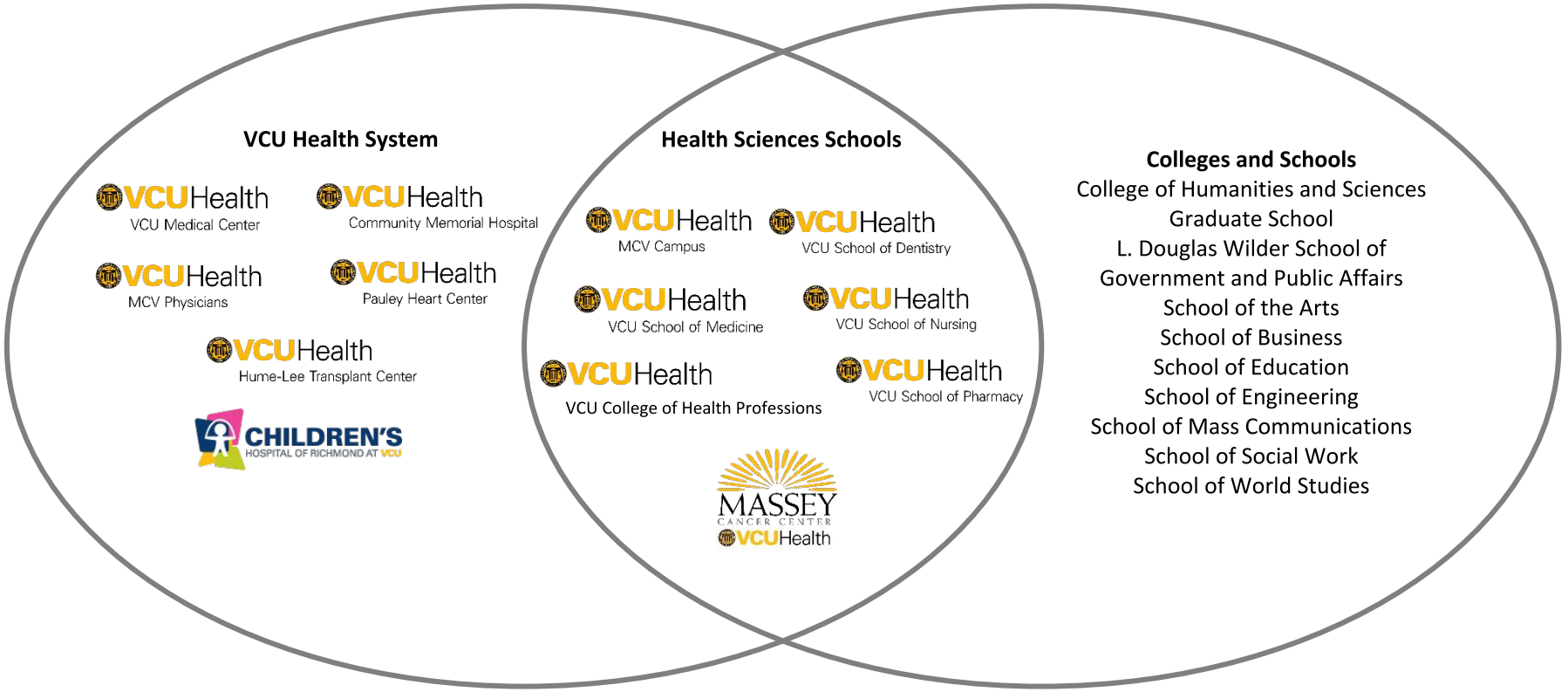
VCU
VIRGINIA COMMONWEALTH UNIVERSITY



VCU Medical Center

Located in Richmond, Virginia

39,030
Inpatient discharges

96,687
Emergency department visits

842,885
Outpatient clinic visits

2,620
Newborn deliveries

4,233
Total trauma admissions

26,492
Total surgeries

779
Licensed acute care beds

- **Only comprehensive Level 1 trauma center** in the state, verified in adult, pediatric and burn trauma care
- **Largest safety-net provider** in the state
- Recognized as **Magnet-designated hospital** for third time by the American Nurses Credentialing Center in 2016

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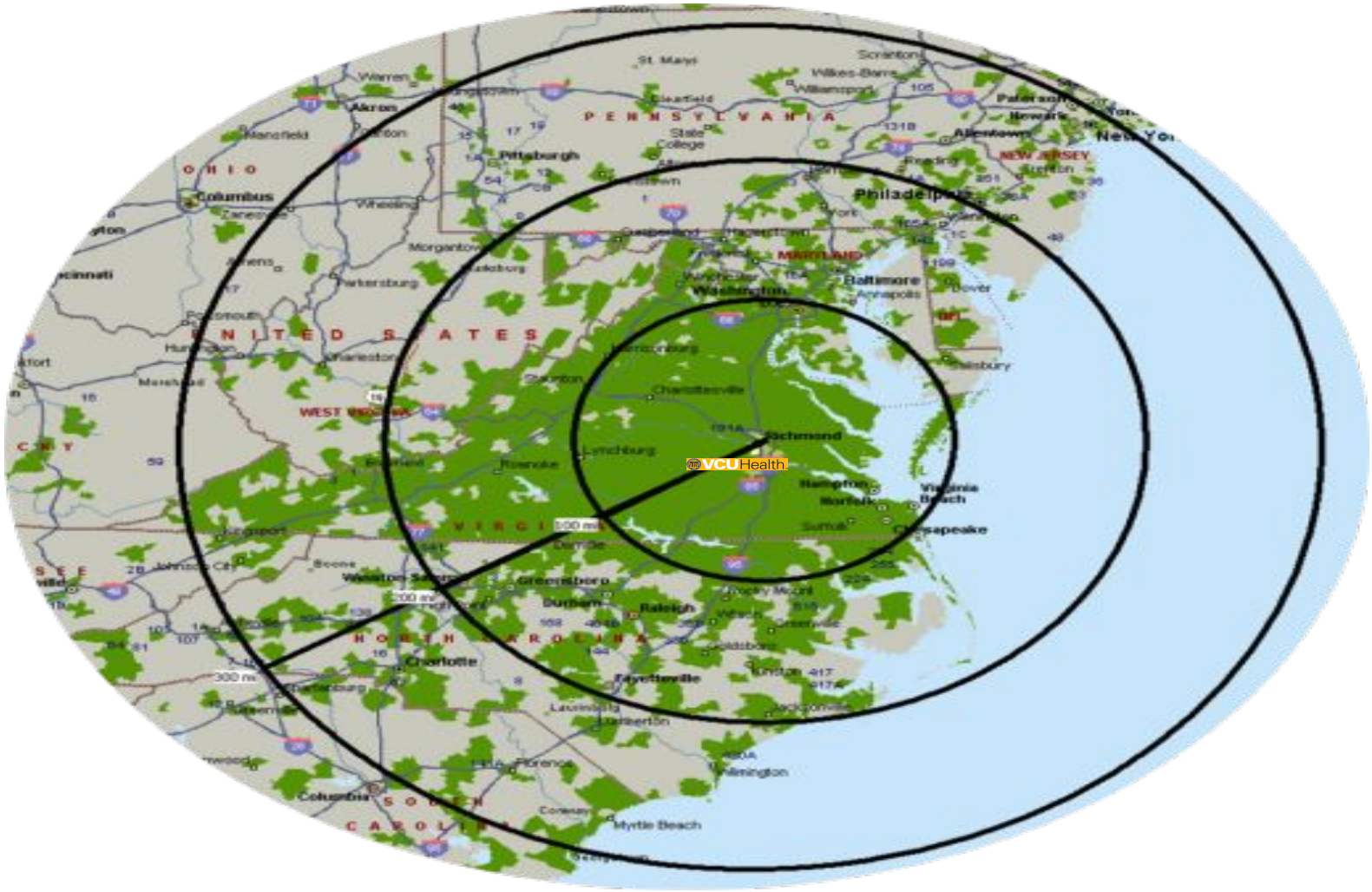
VCU Medical Center is a Regional Referral Center



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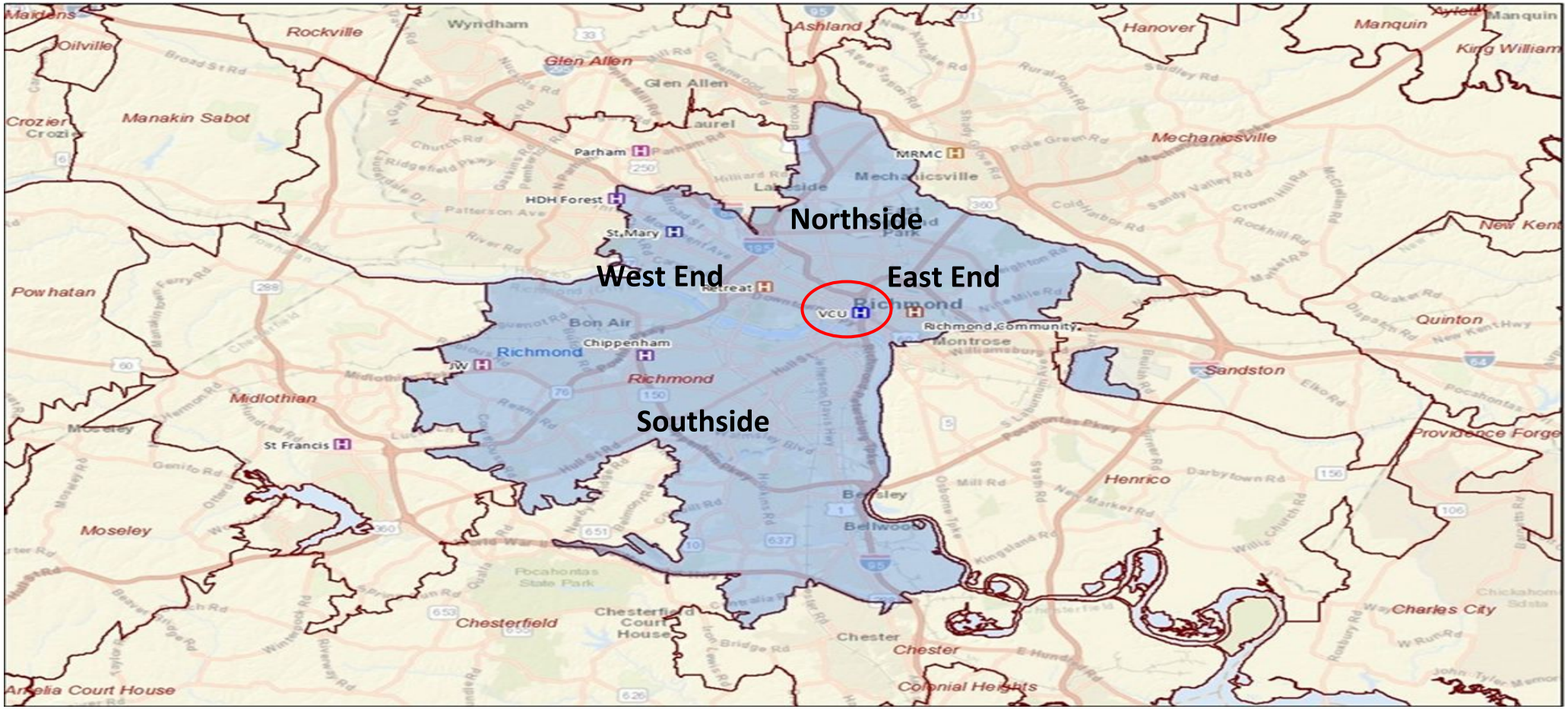
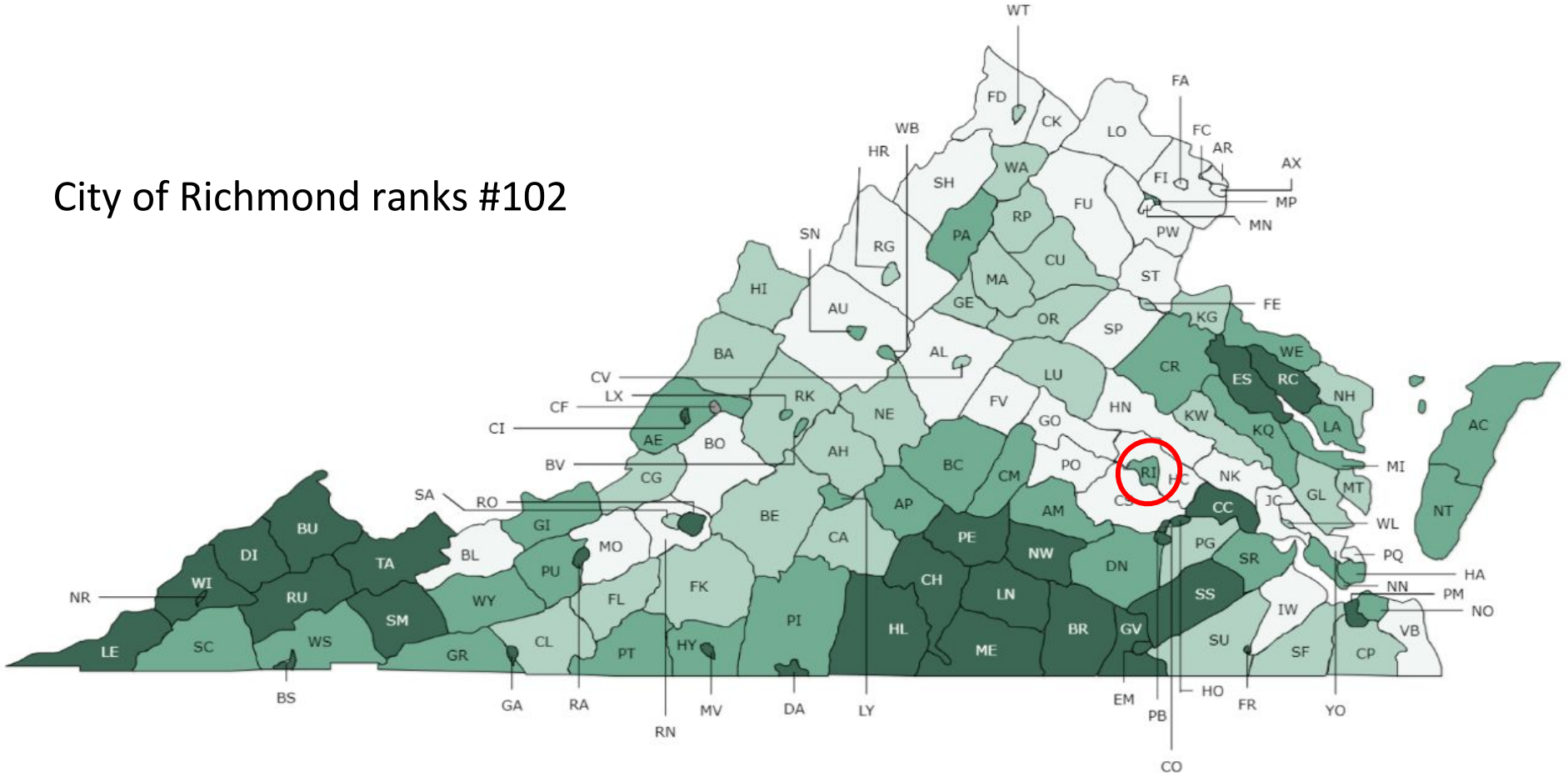
Approximately 35% of patients live in the City of Richmond

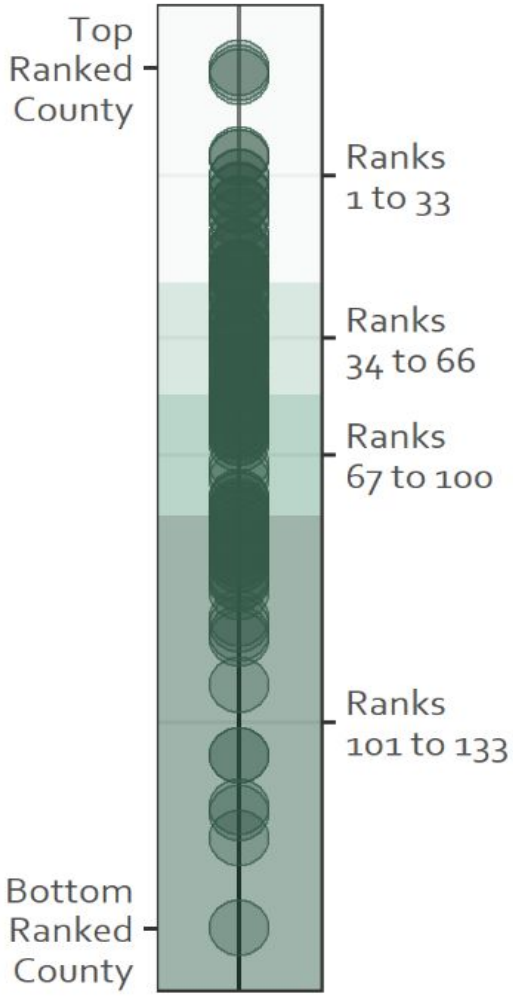


Note: 7% of all patients reside in Richmond's East End

Virginia's 2020 County Rankings for Health Outcomes

City of Richmond ranks #102





Health Outcome Ranks: 1 to 33 | 34 to 66 | 67 to 100 | 101 to 133

One County

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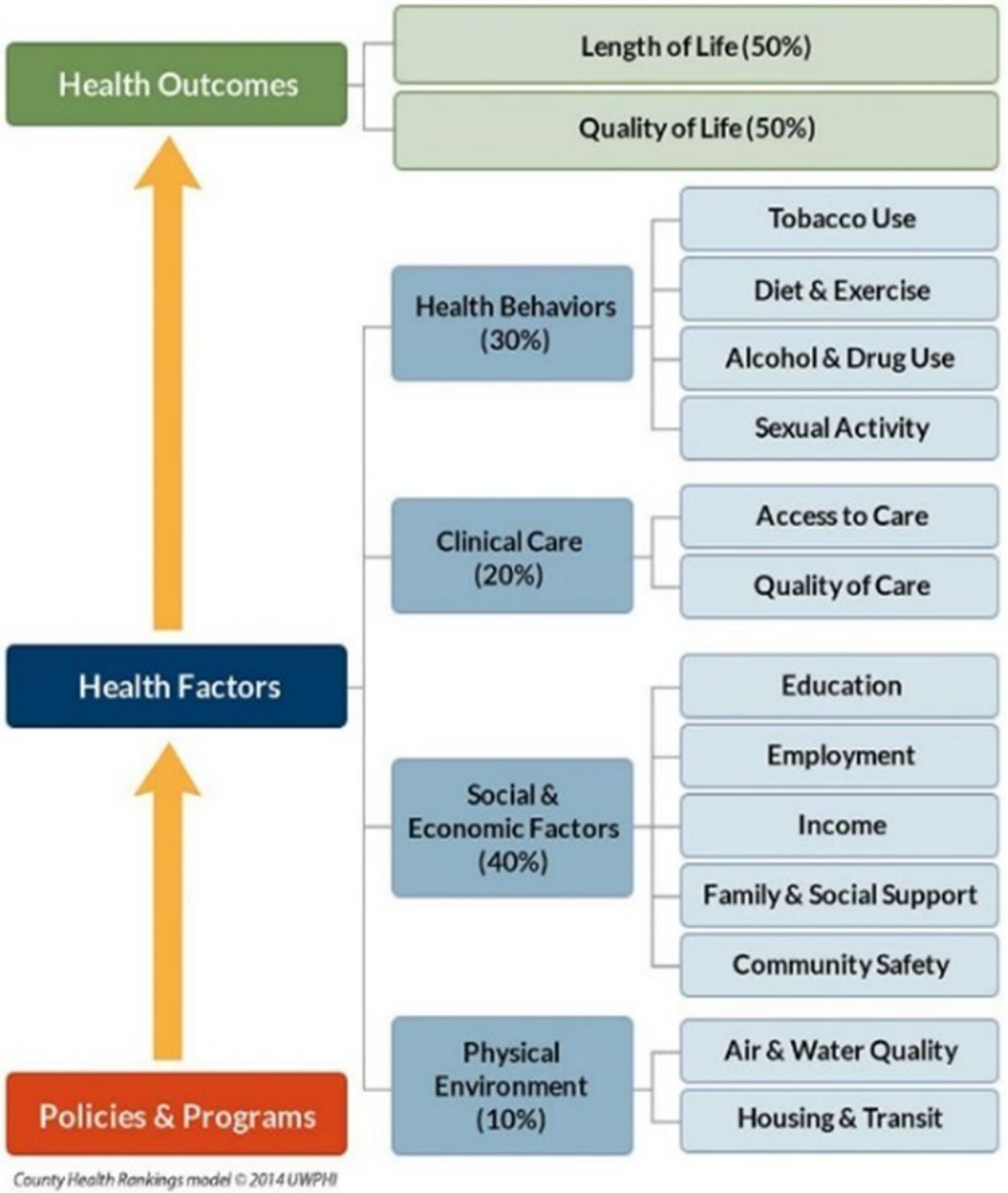
Virginia 2020 County Health Rankings Report; University of Wisconsin Population Health Institute, https://www.countyhealthrankings.org/reports/state-reports/2020-virginia-report.

County Health Rankings Model demonstrates that health outcomes are largely impacted by social determinants of health

Source: University of Wisconsin Population Health Institute



Social Determinants of Health

The conditions in which people are born, grow, live, work, and age, including the health system.

World Health Organization, www.who.int/social_determinants/en/

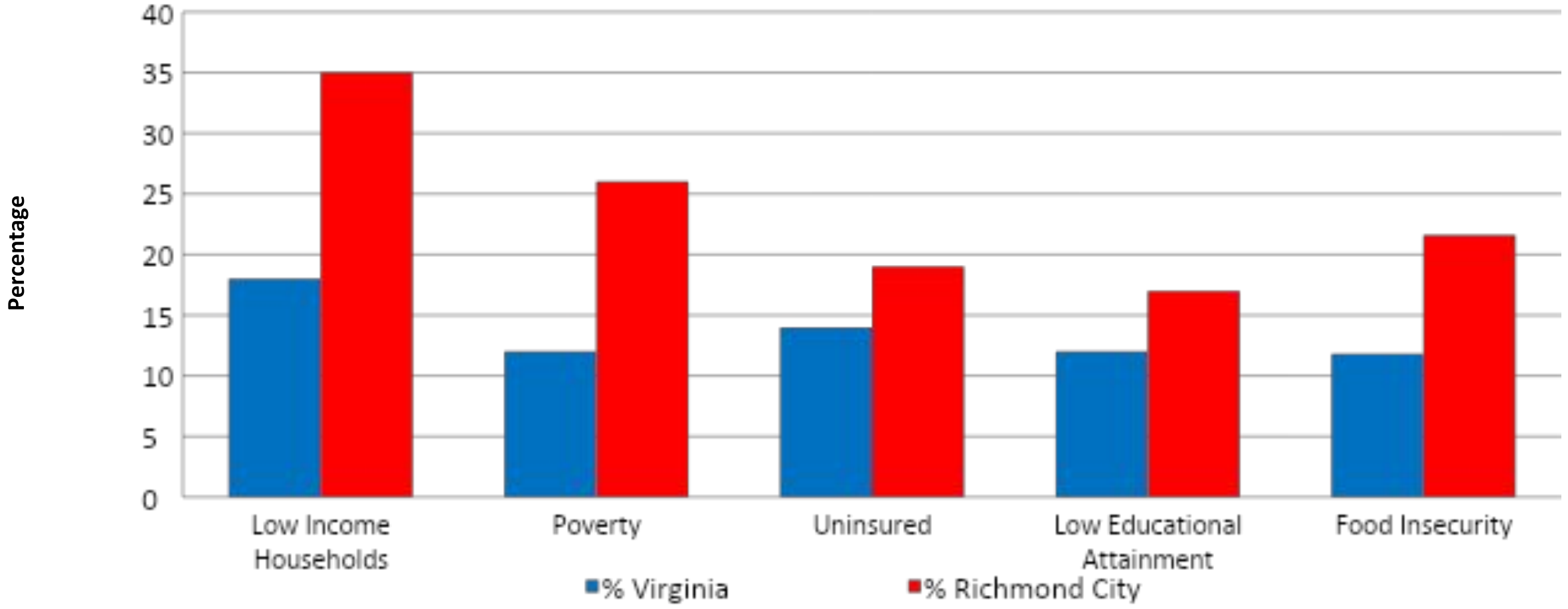
Social Determinants of Health

Economic Stability	Neighborhood and Physical Environment	Education	Food	Community and Social Context	Health Care System
Employment	Housing	Literacy	Hunger	Social integration	Health coverage
Income	Transportation	Language	Access to healthy options	Support systems	Provider availability
Expenses	Safety	Early childhood education		Community engagement	Provider linguistic and cultural competency
Debt	Parks	Vocational training		Discrimination	Quality of care
Medical bills	Playgrounds	Higher education			
Support	Walkability				

Health Outcomes
Mortality, Morbidity, Life Expectancy, Health Care Expenditures, Health Status, Functional Limitations

Heiman, H., Artiga, S., Beyond Health Care: The Role of Social Determinants in Promoting Health and Health Equity, The Kaiser Commission on Medicaid and the Uninsured, Issue Brief, November, 2015.

Percent of Richmond vs. Virginia Residents Who Experience Social Determinants of Health



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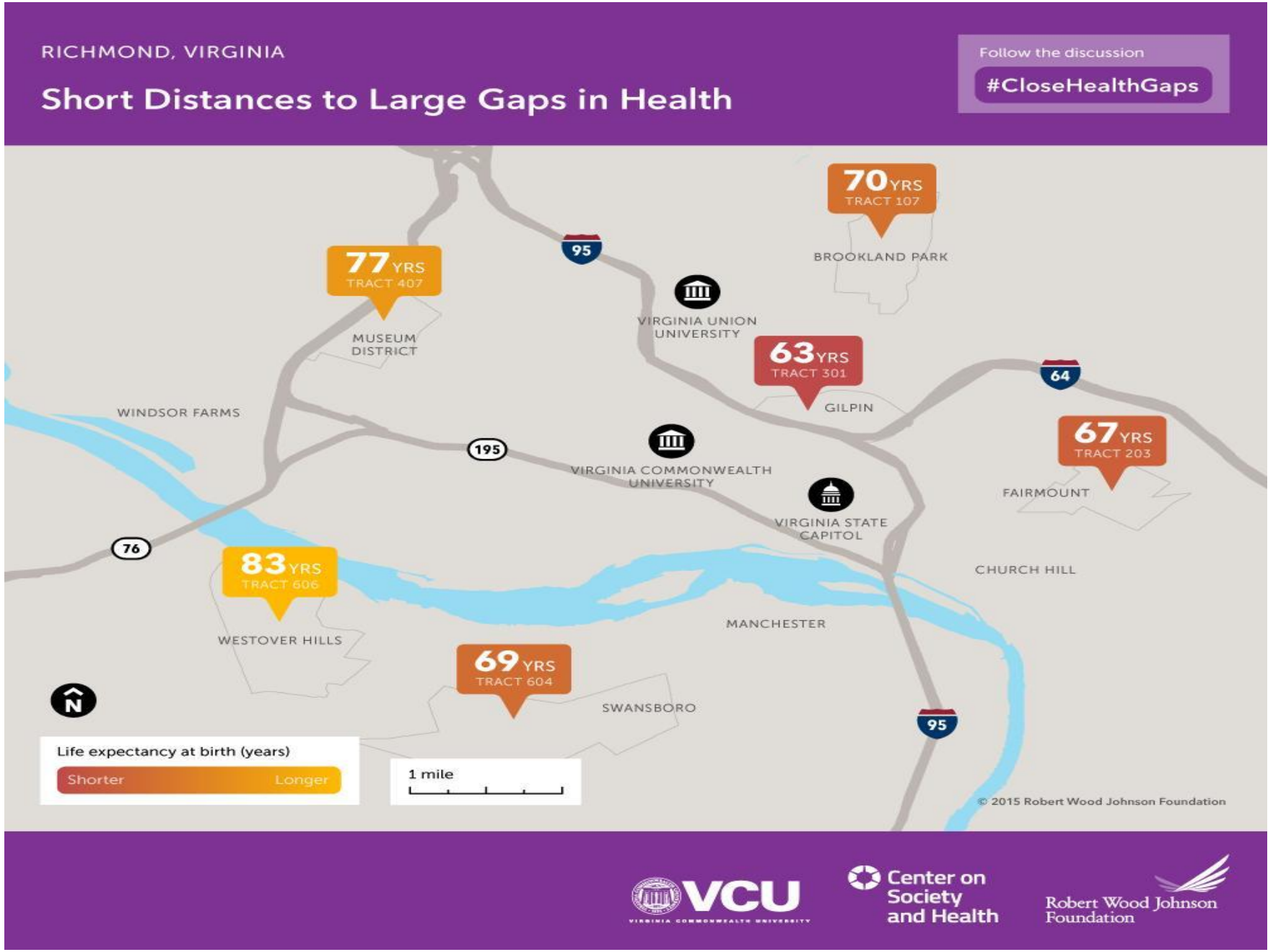
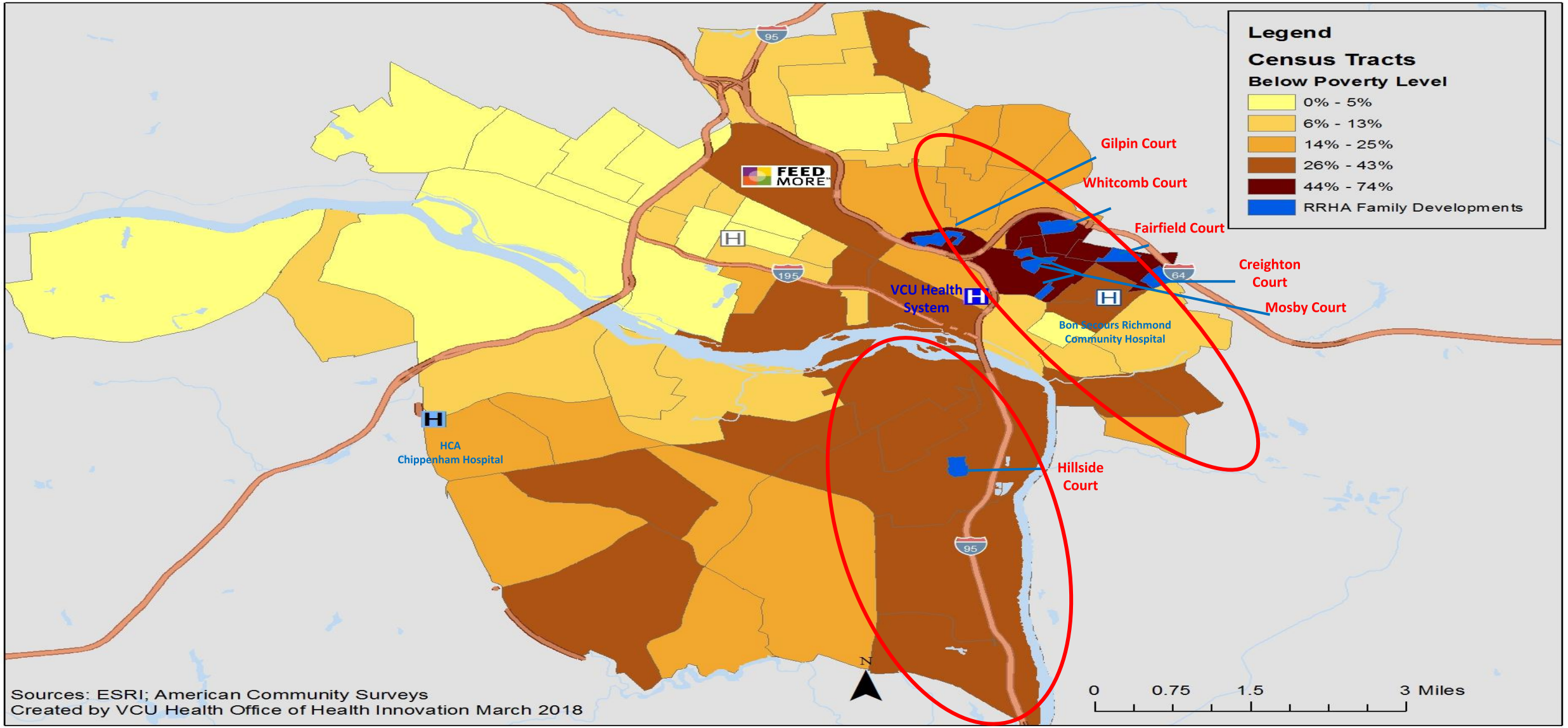
"Babies born just a few miles apart can face vastly different chances of living a long and healthy life."

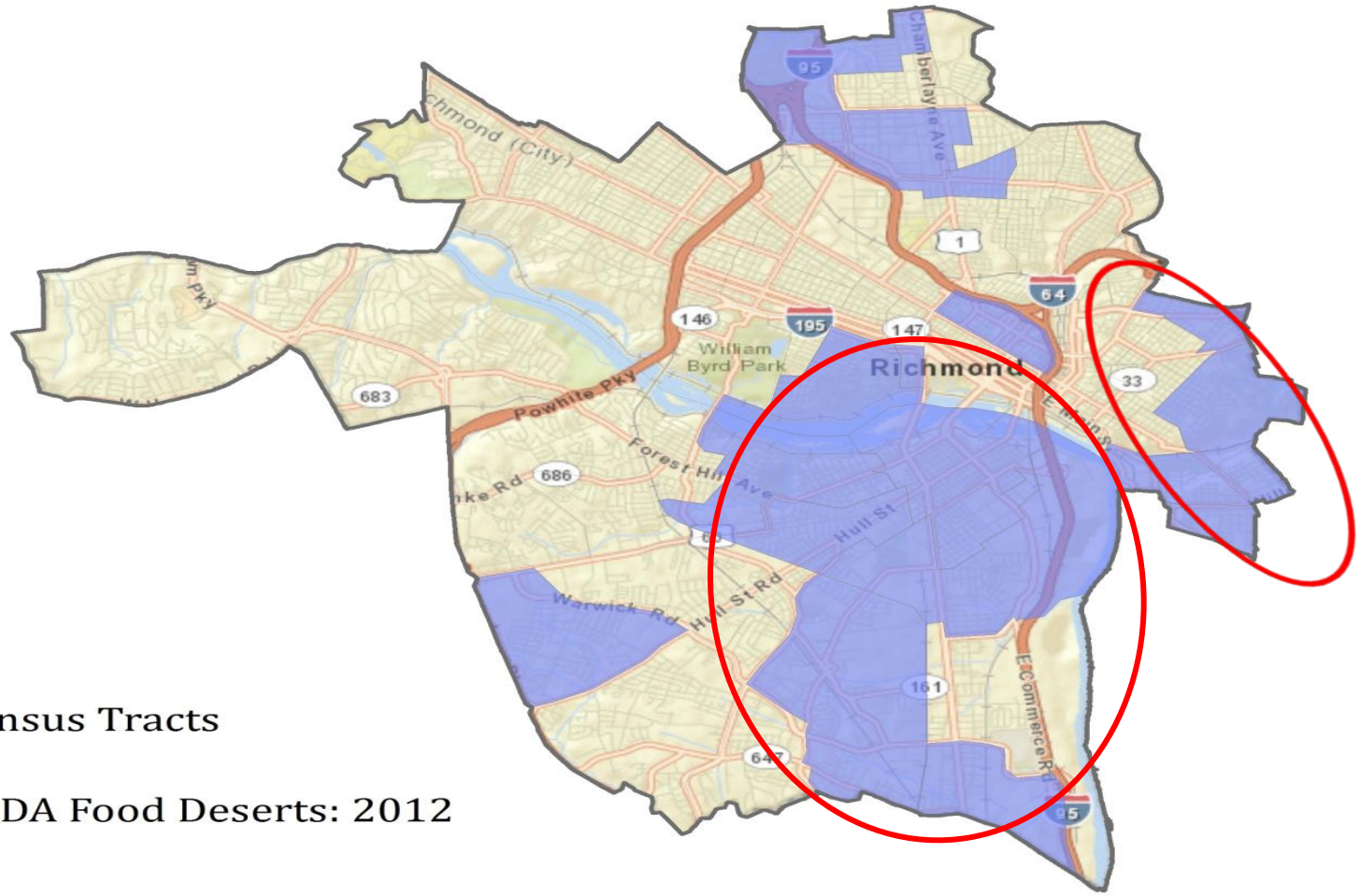
VCU Center for Society and Health



Poverty - City of Richmond



USDA Food Deserts in the City of Richmond



Census Tracts

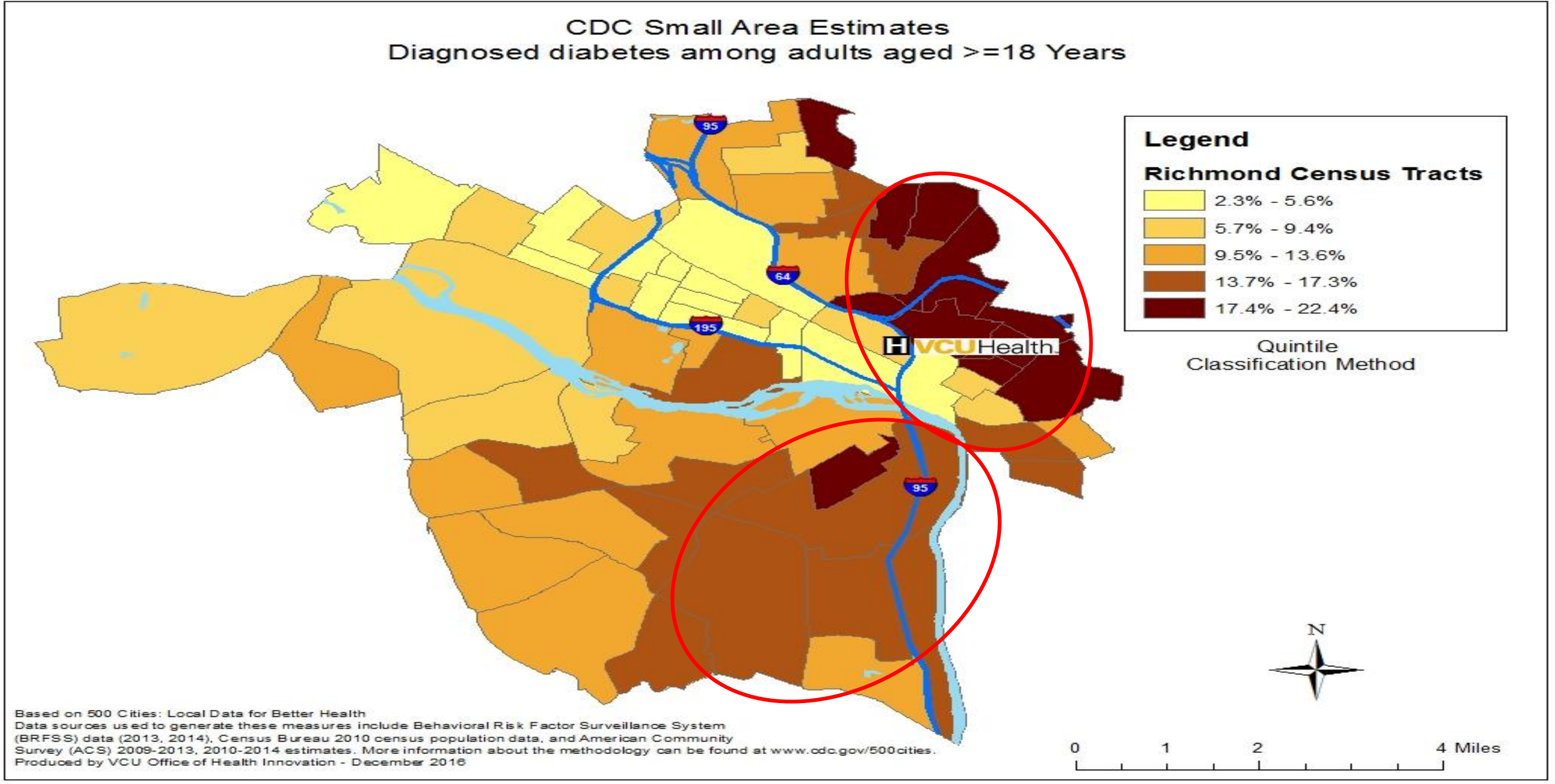
USDA Food Deserts: 2012

N
W E
S

0 5 Miles

May, 2014

Sources:
USDA, 2014; US Census Bureau, 2014
Food Deserts are census tracts where 20% of households have incomes below the federal poverty level, and 33% percent of the tract's population is more than a mile from a supermarket in urban tracts, or 10 miles in rural tracts.
Food Deserts calculated using US Census Bureau data for the year 2012.


CDC Small Area Estimates
Diagnosed diabetes among adults aged >=18 Years
Legend
Richmond Census Tracts
2.3% - 5.6%
5.7% - 9.4%
9.5% - 13.6%
13.7% - 17.3%
17.4% - 22.4%
Quintile
Classification Method
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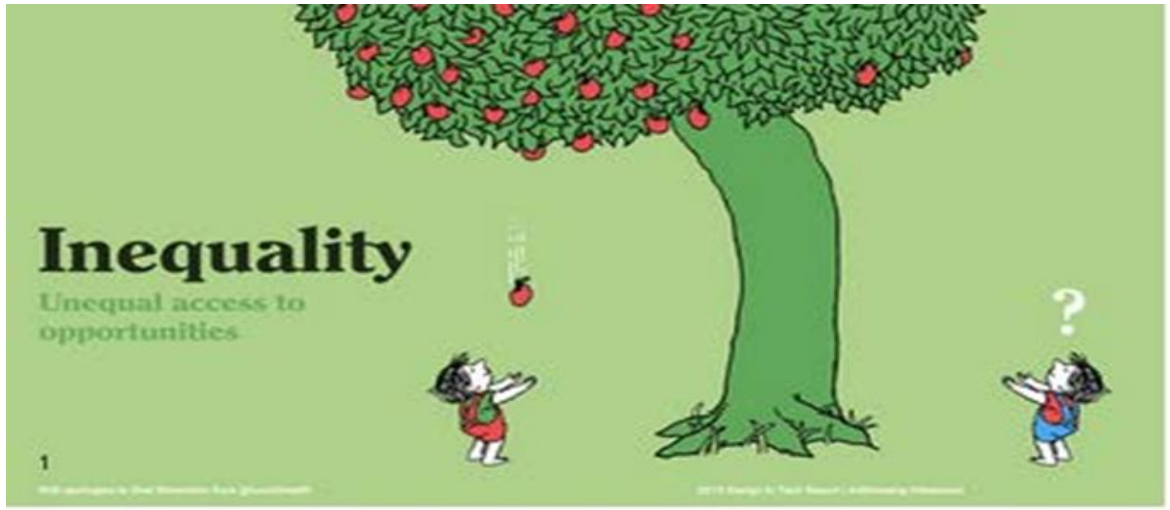
95
64
195
95
N
0
1
2
4 Miles
Based on 500 Cities: Local Data for Better Health
Data sources used to generate these measures include Behavioral Risk Factor Surveillance System
(BRFSS) data (2013, 2014), Census Bureau 2010 census population data, and American Community
Survey (ACS) 2009-2013, 2010-2014 estimates. More information about the methodology can be found at www.cdc.gov/500cities.
Produced by VCU Office of Health Innovation - December 2016

Equality vs. Equity



2019 Design in Tech Report; https://designintech.report/2019/03/11/ design-in-tech-report-2019-section-6-addressing-imbalance/

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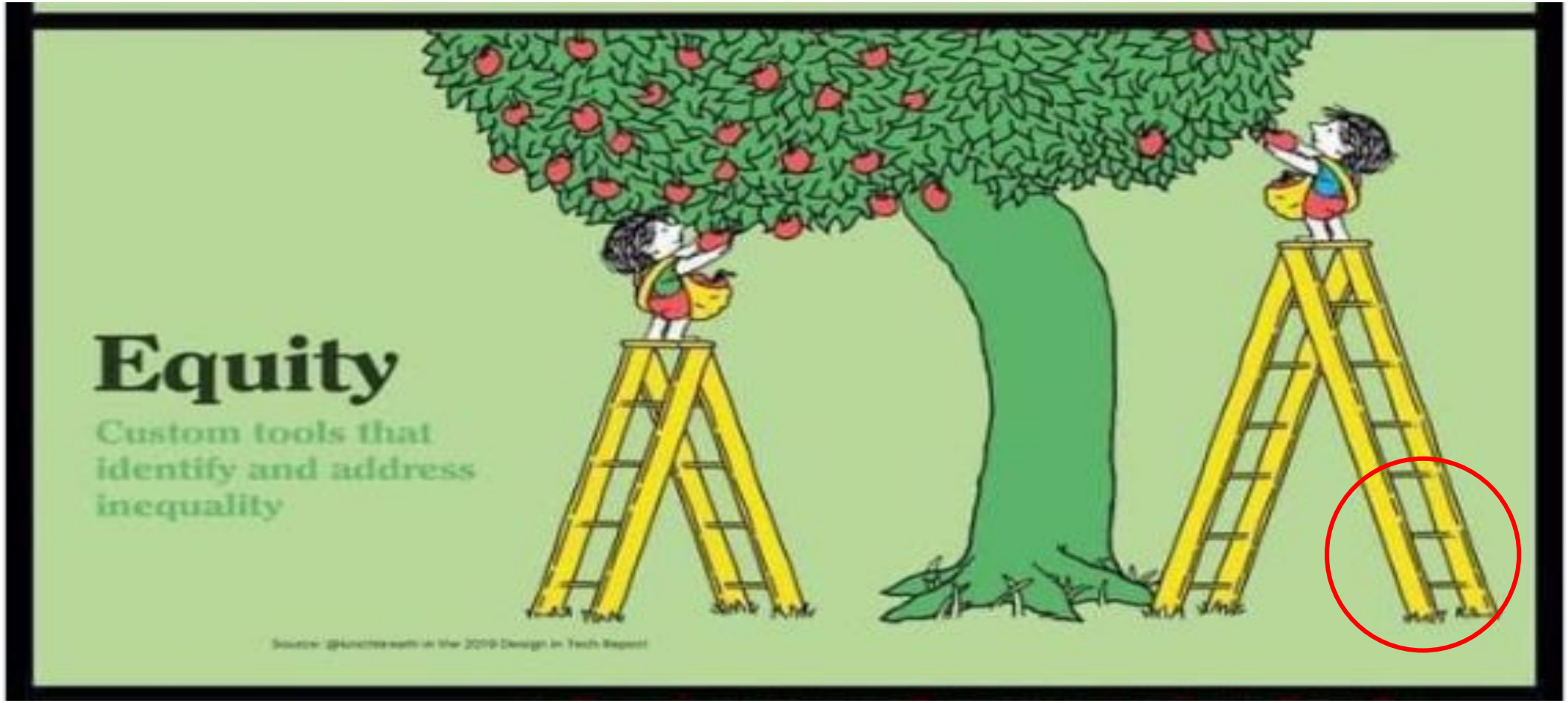
The Principle of Health Equity

"Everyone has a fair and just opportunity to be as healthy as possible."



What is a role for health systems?

Braveman, P, Arkin, E, Orleans, T, Proctor, D, and Plough, A, What is Health Equity?, Robert Wood Johnson Foundation, May 1, 2017, https://www.rwjf.org/en/library/research/2017/05/what-is-health-equity-.html

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The Health Equity Institute, San Francisco State University, http://healthequity.sfsu.edu.

Survey of VCUHS Adult Internal Medicine and ED Patients revealed prevalence of health-related social needs

- Transportation – 26.8%
- Food – 23.1%
- Housing - 14.2%
- Utilities – 11.8%

N=223

O'Neal, J., Favour, M., Turkiewicz, A., McHenry, C., Gonzalez, M., Etz, R., Survey: Presence of Social Need among VCUHS Patients, Spring 2018.

Addressing Food Insecurity in Health Care Settings; Hunger+ Health, Feeding America; https://hungerandhealth.feedingamerica.org/explore-our-work/community-health-care-partnerships/addressing-food-insecurity-in-health-care-settings/. Accessed on October 19, 2020.

Anthem Foundation partnered with Feeding America to launch Food is Medicine Programs

- Initiative funded seven Feeding America member food banks to partner with local hospital clinics
- Goals:
  1) Reduce barriers for patients by implementing on-site **food insecurity screening** and **food distribution** at hospital clinics
  2) Address long-term food insecurity by supporting **enrollment in SNAP** and connecting patients to **additional food assistance resources**

Food is Medicine Program at VCU Health System

- Implemented food insecurity screening and food box distribution in 4 clinic locations
- FeedMore provided food boxes stored at VCUHS to meet short term needs
- Provided reusable grocery bags and transportation assistance to facilitate transport of food items home
- Referrals made to the Hunger Hotline, Wellness Pantries and SNAP application assistance

First Year Results	
Food Insecurity Screenings Completed	1,034
Food Boxes Distributed	422

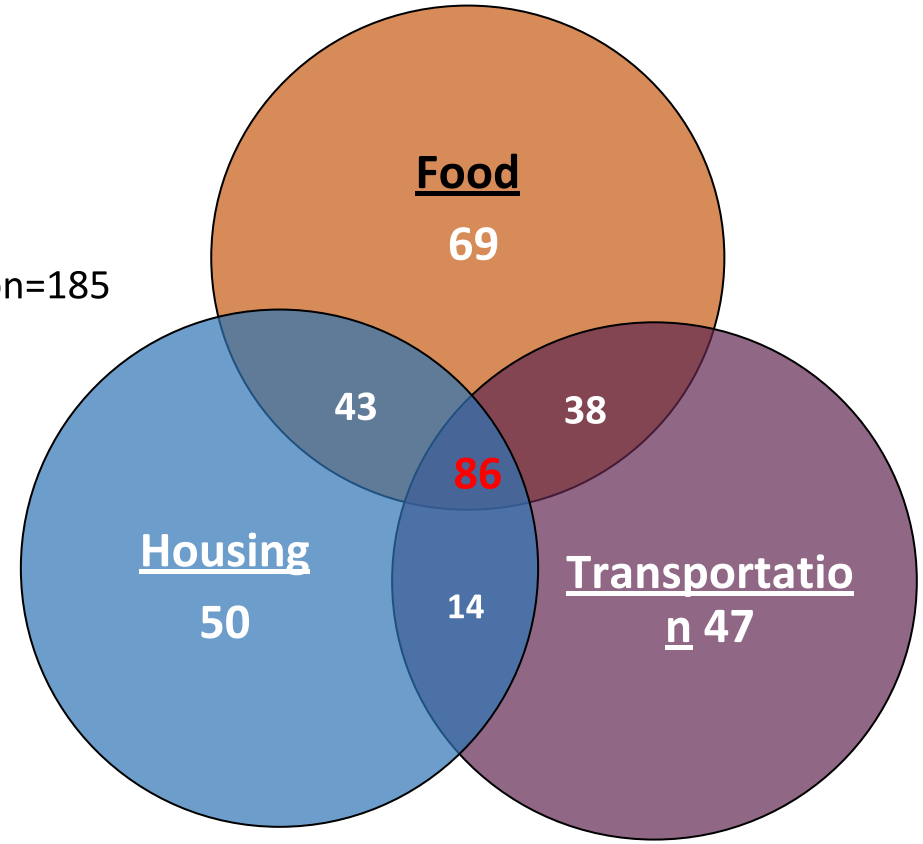
Expansion of Food is Medicine Program to VCUHS Inpatient services

- Launched a pilot on a General Internal Medicine unit with a high readmission rate
- Goal: Screen and refer for health related social needs to identify impact on utilization rates
- Incorporated screening results into daily flash rounds
- Established space and processes for the distribution of food boxes
- Initiated closed loop tracking with FeedMore to determine pantry utilization post-discharge

INTERVENTIONS: 776 patients screened to date
347 screened positive for at least one need

N = 347

Food=236
Housing=193
Transportation=185



- Interventions
  - Food Boxes
  - Hunger Hotline Referrals
  - Housing Crisis Line Information
  - Income-based Housing Information
  - Medicaid Transportation and RoundTrip Rides
  - Other transportation options for follow-up appointments*

**Other transportation options includes Arrive2Care, GRTC specialized transportation, and CAPUP*

1) *Data range 5/20/19 – 10/2/2020*
2) *Includes all patients that screened positive for at least one need. Numbers to left of graph are the totals for that need; of that total, patients with multiple needs are represented in the overlapping circles.*
3) *Screening data includes multiple data for patients with multiple admissions to N5 during the timeframe.*

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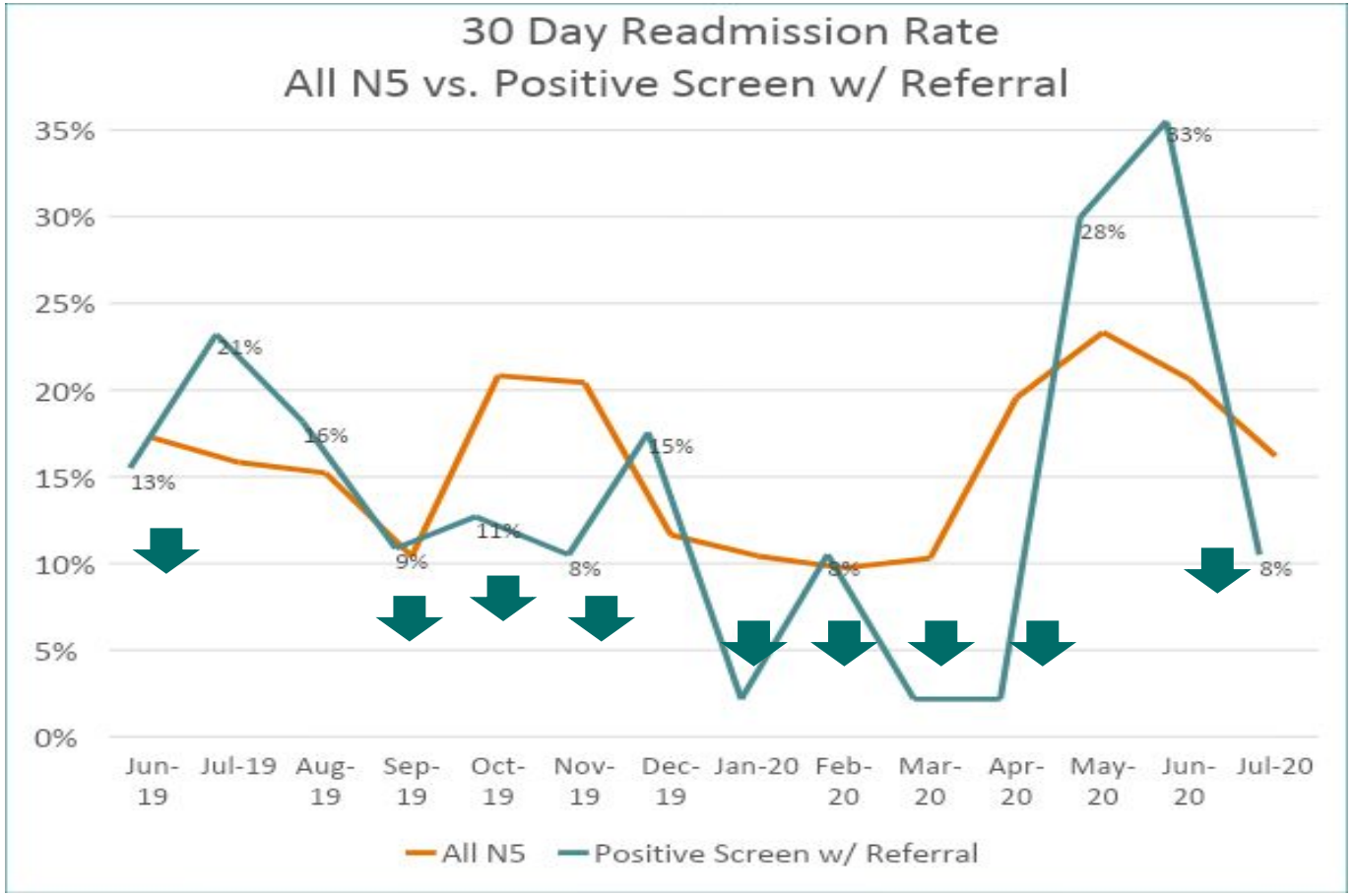
OUTCOMES: For the Intervention population, 30-day readmission rates were lower for 9 of the 14 months



1) *Data for each month reflects the cohort of patients with discharges from N5 during that month*
2) *PRE data is all VCUMC utilization for cohort patients for 60 day period prior to their Index Discharge on N5*
3) *POST data reflects VCUMC utilization for cohort patients for 60 day period after their Index Discharge on N5*
4) *Includes data for Index Discharges from N5 between 5/20/19 and 9/8/2020, data as of 9/8/2020*

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VCU Health Hub at 25th

East End of Richmond

- Co-located a health education and wellness center next to a grocery store in a food desert
- Goal: Address food insecurity through programs that focus on nutrition education and prevention strategies
- Provides site to engage VCU teams to address community needs

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Closing Thoughts….

- Addressing health related social needs will be important for health systems to achieve improved health outcomes for vulnerable populations
- Community partnerships are essential to connect patients with needed resources
- Health care systems and community partners need to explore alternative payment models with payers to develop sustainability models

Best Practices

- Kaiser Permanente – Food for Life (https://about.kaiserpermanente.org/community-health/news/boosting-food-security-to-improve-nation-s-total-health).
- Boston Medical Center – Preventive Food Pantry (https://www.bmc.org/nourishing-our-community/preventive-food-pantry)
- Eskenazi Health and Meals on Wheels of Central Indiana (https://www.aha.org/news/insights-and-analysis/2018-02-21-case-study-eskenazi-health-partners-community-address-food).
- Arkansas Children's Hospital - Little Rock, Arkansas (https://www.aha.org/news/insights-and-analysis/2018-01-23-arkansas-childrens-hospital-works-community-partners-address).

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